TU31/TU32
Induction Motor Speed Controller
User's Manual

Made by TROY Enterprise Co., Ltd

TÜV Rheinland/Berlin-Brandenburg TÜV Anlagentechnik GmbH ISO14001 Certificate No.: 09 104 9351

TÜV CERT DIN EN ISO 9001:2000 Certificate: 09 100 99275

Environment Responsibility

- TROY is always committed to environment protection. All packaging material is recyclable and reusable.
- If disposing of used product, please recycle by type as per waste disposal procedures.

----------Protect the green earth with your care and commitment----------

※The product is subject to design modification for performance improvement without prior notice. For more details please contact your local seller.

Precautions

Precautions for using

1.Thank you for purchasing TROY products. Please read this user's manual thoroughly before installing and operating the driver, and always keep the manual where it is readily available.

2. The products described in this manual has been designed and manufactured for use in industrial machinery, and must not be used for any other purpose. We are not responsible for any damage caused through failure to observe this warning.

3.Check that the motor, driver and any accessories are all present. If an accessory is missing or damaged, contact the nearest our branches.

4.Never disassemble the motor and driver. Damage or performance impairment may result. Disassembly voids all warranties.

Precautions for maintenance

Check the ambient environments, clean the system equipment to remove dust and tighten the screws periodically. Also pay attention to the followings.

1. Contact us when repairs become necessary.
2. Since the temperature of the frame of the driver can rise high, be careful when conducting maintenance work or inspection work.

Precautions for warranty period

Within the period of one year after delivery of the system equipment, when failures occurring from design error or fabrication error attributable to the manufacture side occur, we will be repairing the failure free of charge within the reparable range or will replace with substitute.
(We cannot hold ourselves responsible for breakage and accidents occurring from your use beyond the specified range described in this document.)

Precautions for disposal

When disposing of the driver and the motor, treat them as ordinary industrial waste.

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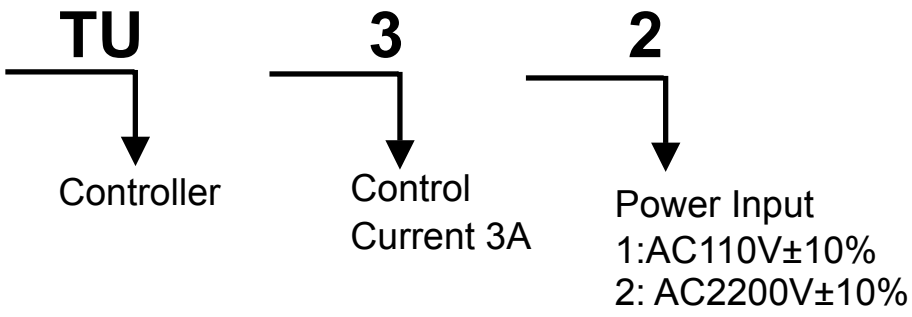
※For any operational or technical question with the product, please contact us for professional service「**0800-450-168**」during our business hours.

1.Product specs

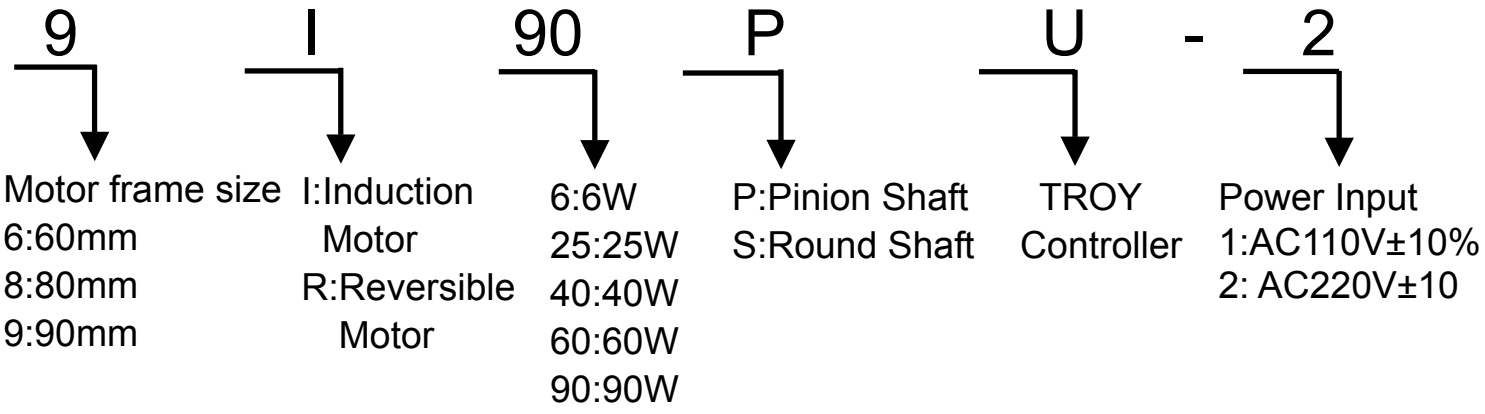
1.1Specs

Model	TU31	TU32
Drive current	3A	
Power input	Single phase AC110V±10% 50/60Hz	Single phase AC220V±10% 50/60Hz
Drive motor power	＜90W	
Speed regulation	50Hz:70~1400r/min 60Hz:70~1700r/min	
Functions	Speed control、Instantaneous brake stop、slow start、slow stop	
Insulating resistance	When tested with DC500V high resistance meter, the resistance between power, F.G ground, and I/O contact terminal is over 100MΩ.	
Insulating voltage resistance	No abnormal symptoms when supplying 1.8KV/60Hz voltage between the power and the F.G ground connection terminal and 3KV/60Hz voltage between the power and I/O connection terminal for one minute.	
Ambient temperature	0~40℃	
Ambient humidity	Max.85%RH	
Dimension	100(L)X60(W)X99(H)	
Weight	180g	

1.2 Controller name and product number code



1.3 Attached motor name of product number code



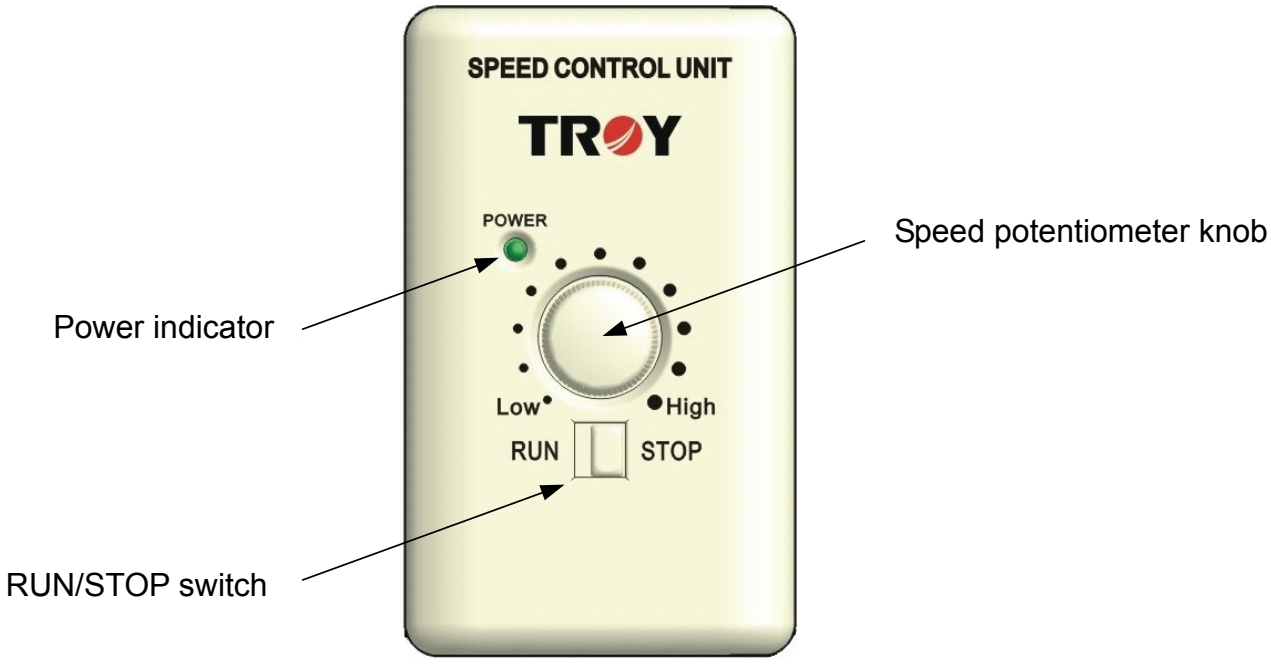
2.Verifying the products and accessories

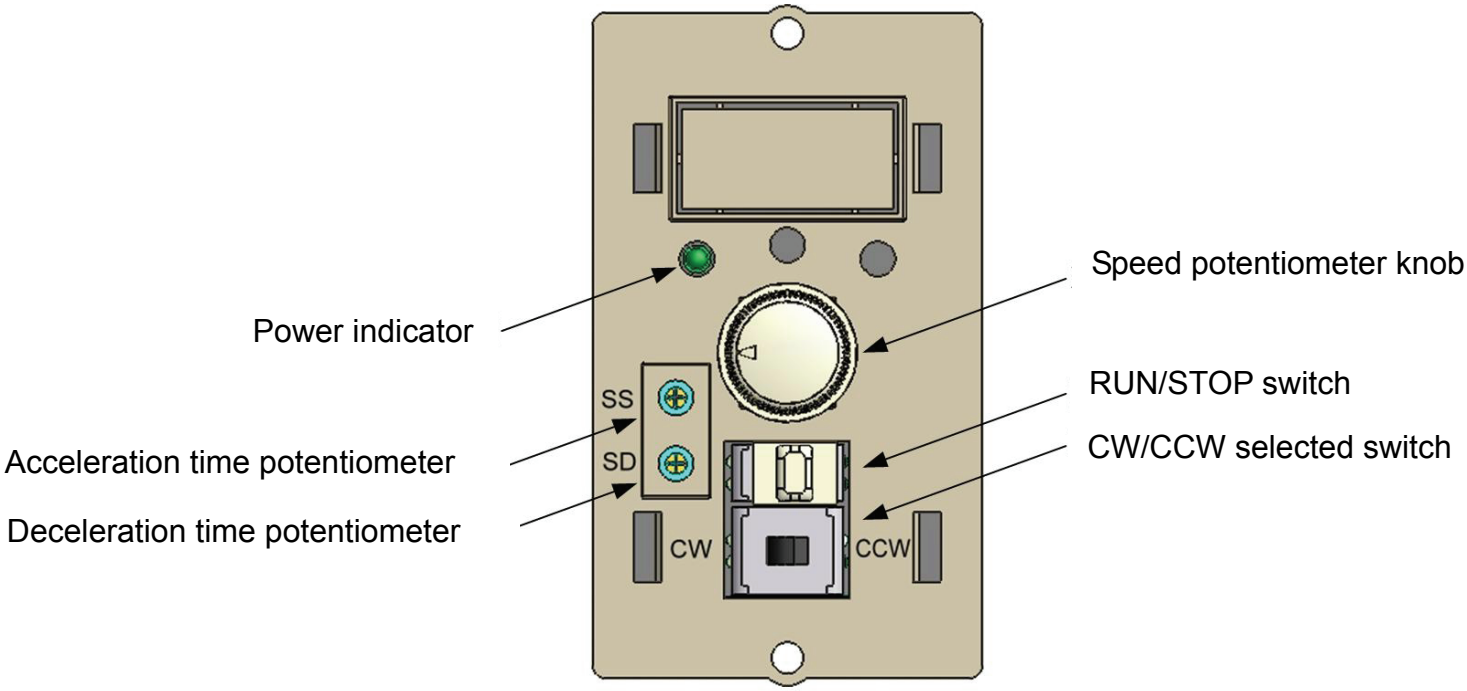
Check that the following items and any accessories are all present.If an accessories is missing or damaged,contact to the nearest local seller.

Items	Quantities
Controller	1
Connector(2 PIN)	1
Connector(6 PIN)	1
Extension cable(1m)	1
Ground screws	1
Screws provided with starting capacitor	1
Wiring line of starting capacitor	2
User's manual	1

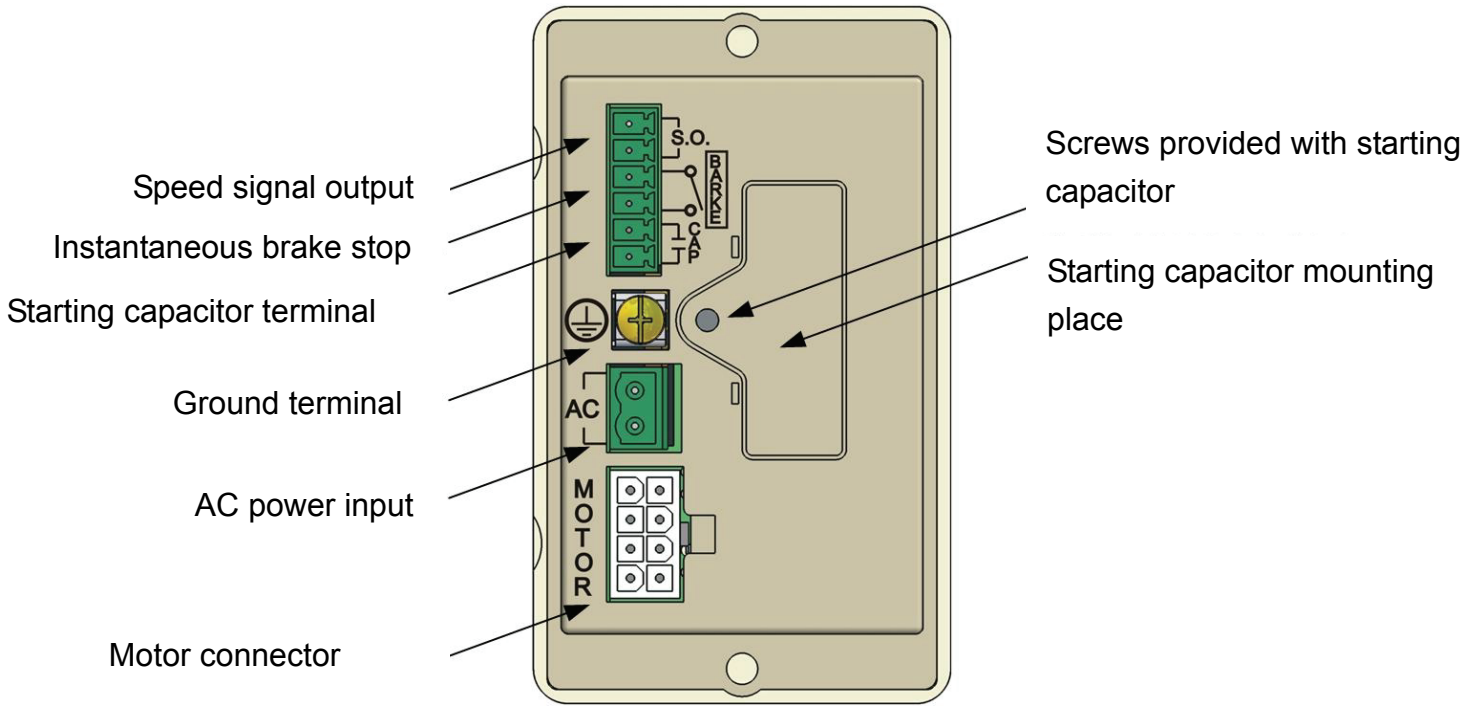
※The starting capacitor provided with motor package,our controller applied to 6W~90W motor,so the starting capacitor didn't provided with controller.Please make sure the starting capacitor is conformed to the motor or not.

3.Names and functions of controller





Disposing after disassemble

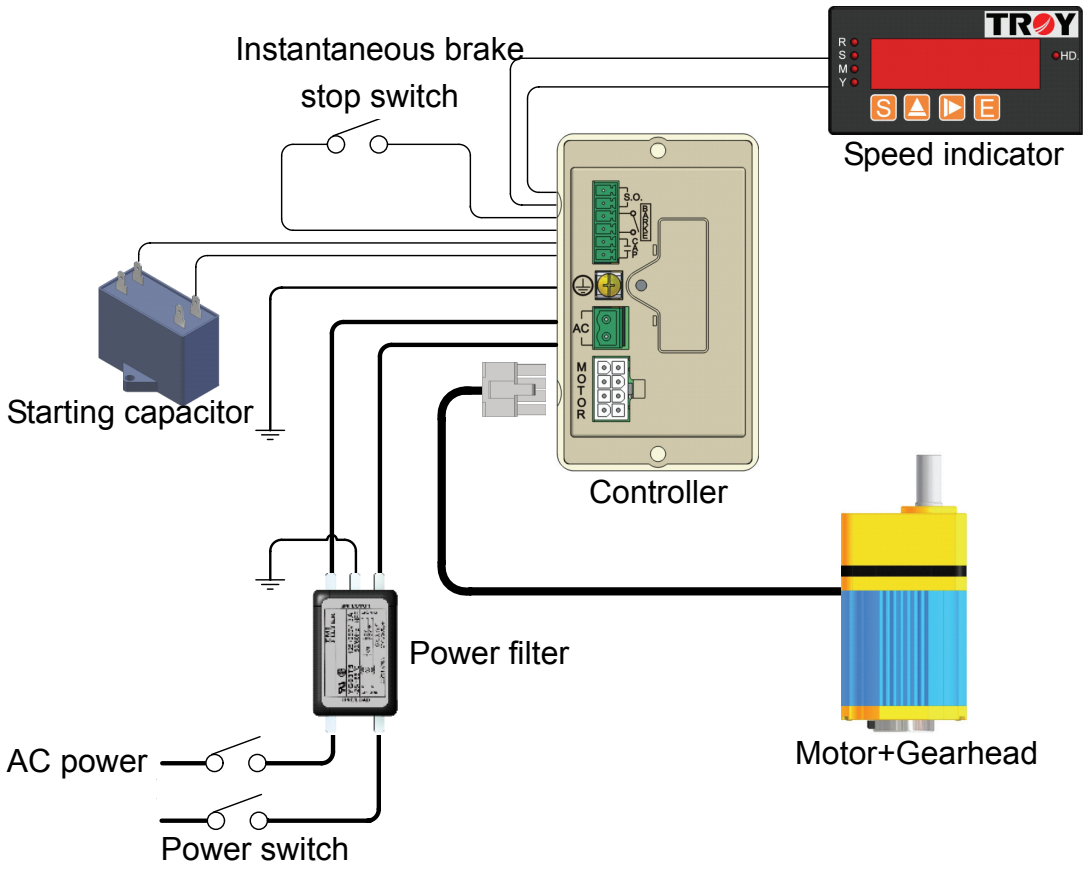


Disposing of controller back side

Items	Name	Functions
Power indicator	POWER	When AC power on, the LED (Green) lit up
Speed potentiometer knob	LOW→HIGH	The knob turn the CW direction LOW to HIGH and the motor speed became fast from slow
RUN/STOP switch	RUN/STOP	The tip switch switched to the RUN side, the motor start operating The tip switch switched to the STOP side, the motor stop operating
Acceleration time potentiometer	SS	Acceleration time max 23 seconds(With no loads)
Deceleration time potentiometer	SD	Deceleration time max 28 seconds(With no loads)
CW/CCW selected switch	CW/CCW	When motor operated direction with gearhead direction are different from machinery direction.Selected the direction by this switch
Speed signal output	S.O.	When require monitored the speed which could be monitored by speed indicator via this output
Instantaneous brake stop	BRAKE	These 2 terminals short circuit can make the motor instantaneous stop
Starting capacitor terminal	CAP	Terminal for connected with the starting capacitor
Screws provided with starting capacitor		Secured the capacitor attached with motor
Ground terminal	⏚	Connected with system ground wire
AC power input	AC	Please input the voltage according to the controller specs
Motor connector	MOTOR	For connecting the motor cable

4.Connection and operation

4.1Wiring diagram



Rated specs for switch	TU31	TU32
Power switch	AC125V 10A	AC250V 5A
Instantaneous brake stop	DC20V 1mA	

※Please use the switch without electrifying contact,do not use the electrifying contact(Forexample :Transistor output PLC)

4.2Opeartion

4.2.1Operation steps

(1)Please turn the AC power ON and POWER indicator lit up

(2)Please turn the RUN/STOP switch to the RUN side

(3)Turning the speed potentiometer in to the CW direction,the motor speed became fast

(4)If want to make motor stop,please turn the RUN/STOP switch to the STOP side,then motor will slow and stop by the inertia

(5)If want to make motor instantaneous stop,please turn the instantaneous brake stop ON and motor stop instantaneously

4.2.2Operation conditions

(1)Do not control the motor run/stop by power switch,when power turned on the motor operated at the same time and generated surge current which will cause the controller damaged

(2)RUN/STOP switch is not the power switch of the controller.If want to make motor stopping for long time,please turn the controller power OFF

(3)Restarting the instantaneous stop please restarted it after more than 0.5seconds.During the continuous run/stop,make sure the using frequency not over the 4 seconds(Run and stop each over 2 seconds)The using frequency over high will cause to the controller damage

4.2.3CW/CCW operation

(1)When switch the CW/CCW direction,please turn the RUN/STOP switch to the STOP side and turn off the power

(2)Do not switching the CW/CCW during motor operation and controller will damage easily

4.2.4

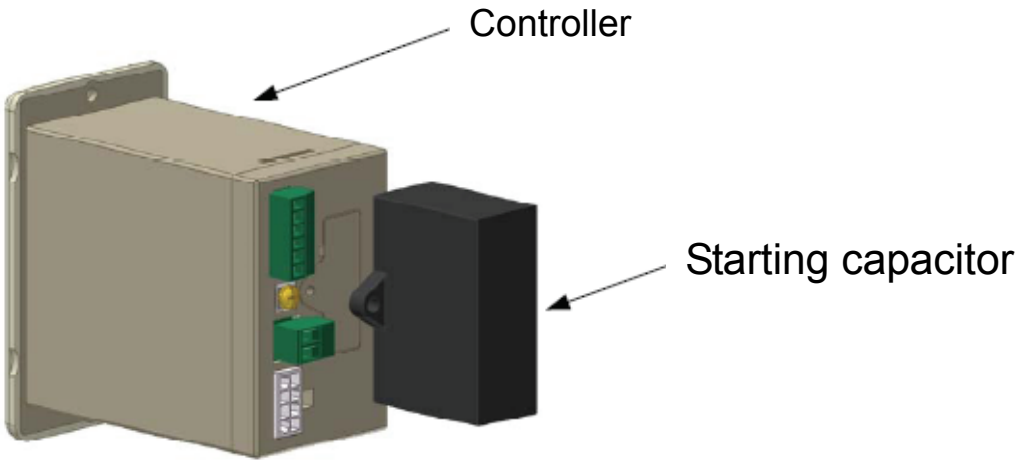
Extension cable 1 m provided with the controller,if the length is not long enough and want to extend the length.Please used the extension cable which we provided(Sold separately).The max length can extended to 5 m and do not use too many extansion cables to extended length which will lead fault action.When connection turn off the power first to avoid the un-proper contact caused the controller damage

4.2.5Extension cable specs

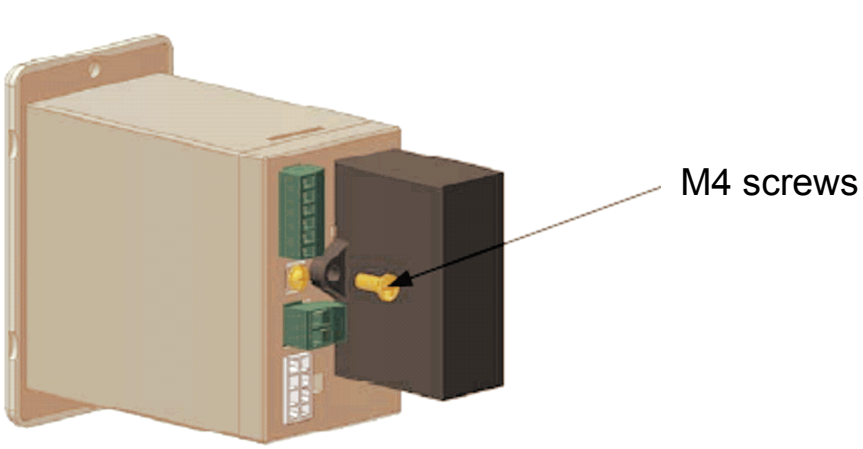
Model	Length(m)
CU-010	1
CU-020	2
CU-030	3
CU-050	5

5.Installation

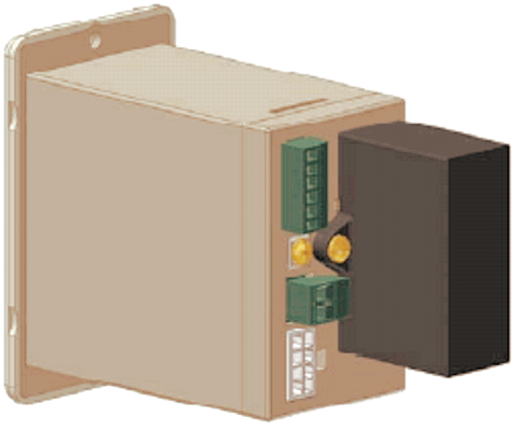
5.1Starting capacitor installation



Step 1. Taking out the starting capacitor from the package

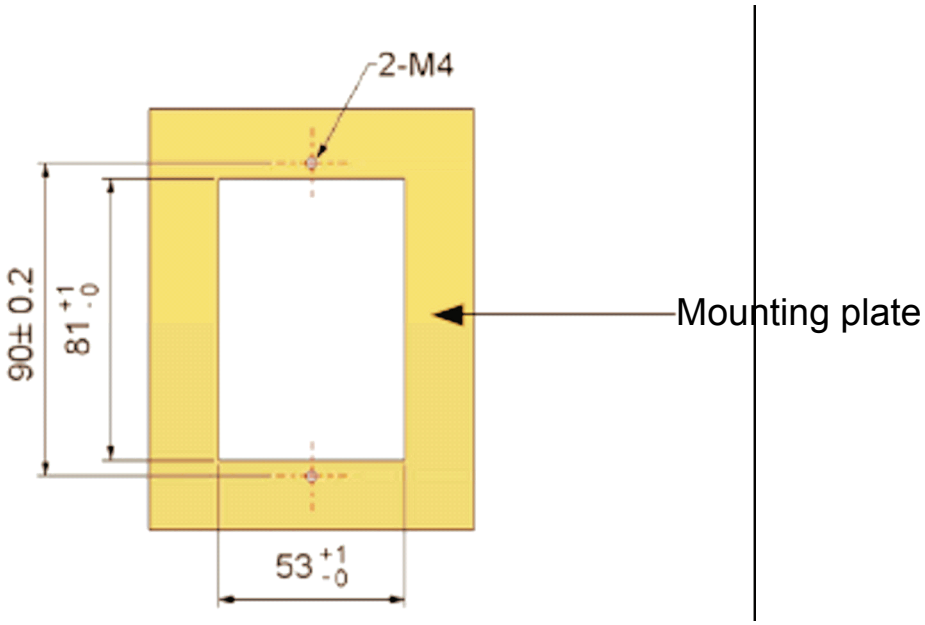


Step 2.Attach a capacitor securely, using M4 screw

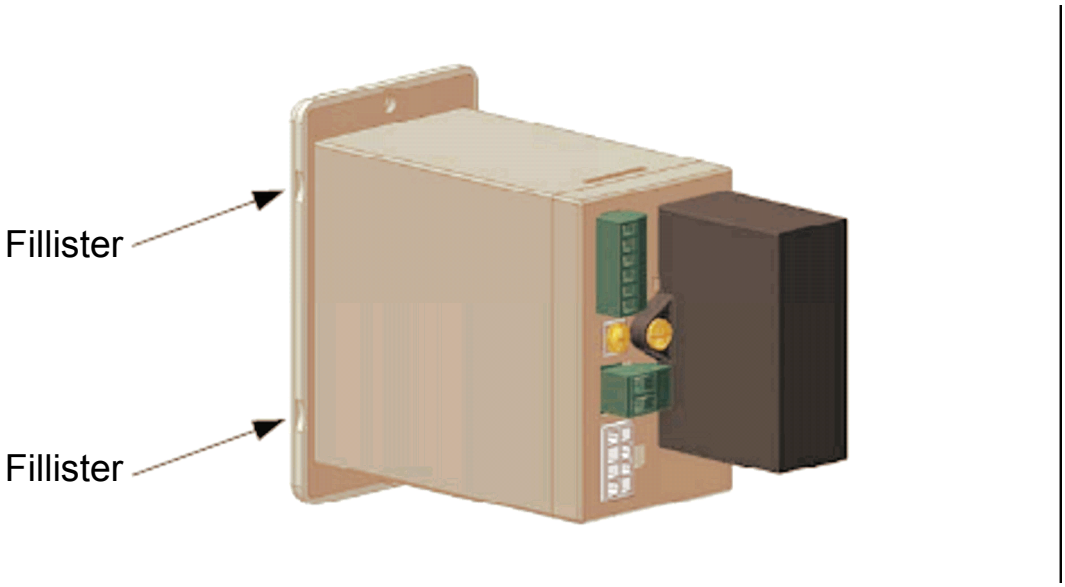


Step 3.Finish

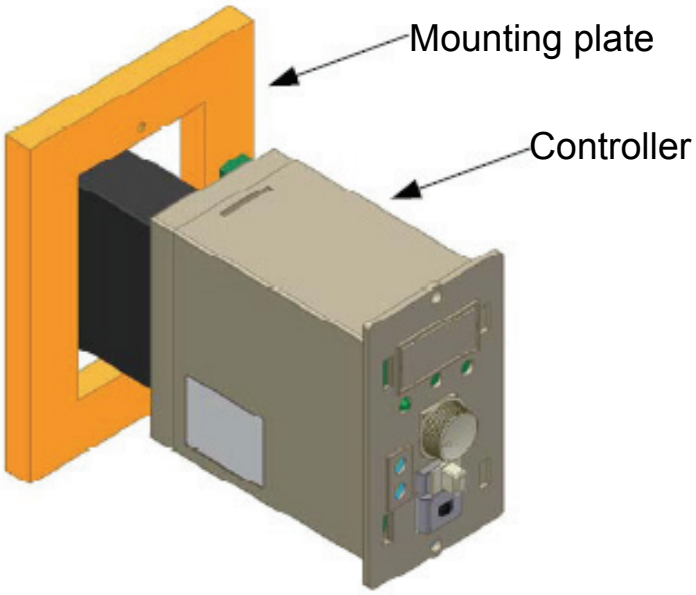
5.2Controller installation



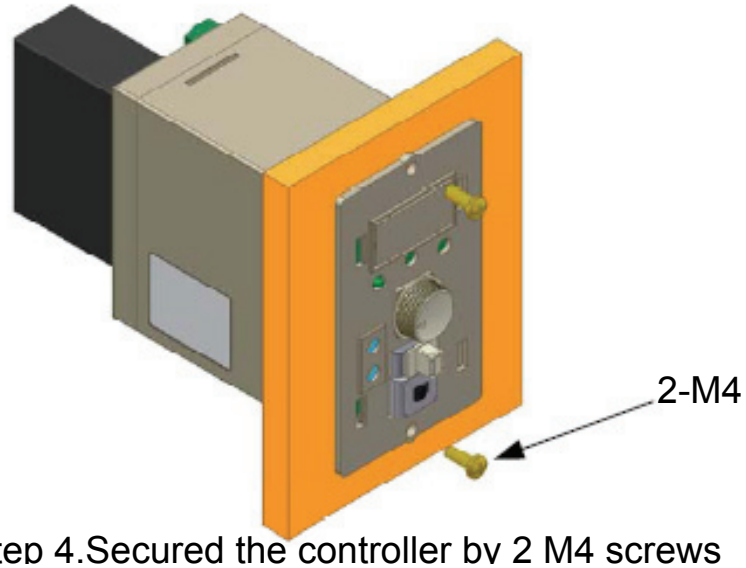
Step 1.Making the screw hole following the diagram



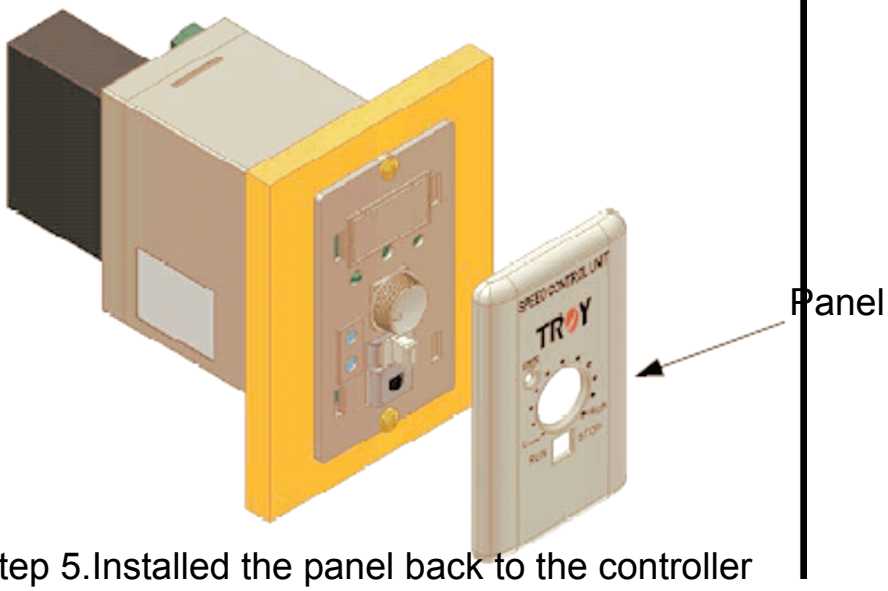
Step 2.Taking off the panel from the 2 fillisters of controller side



Step 3.Put the controller into the mounting plate



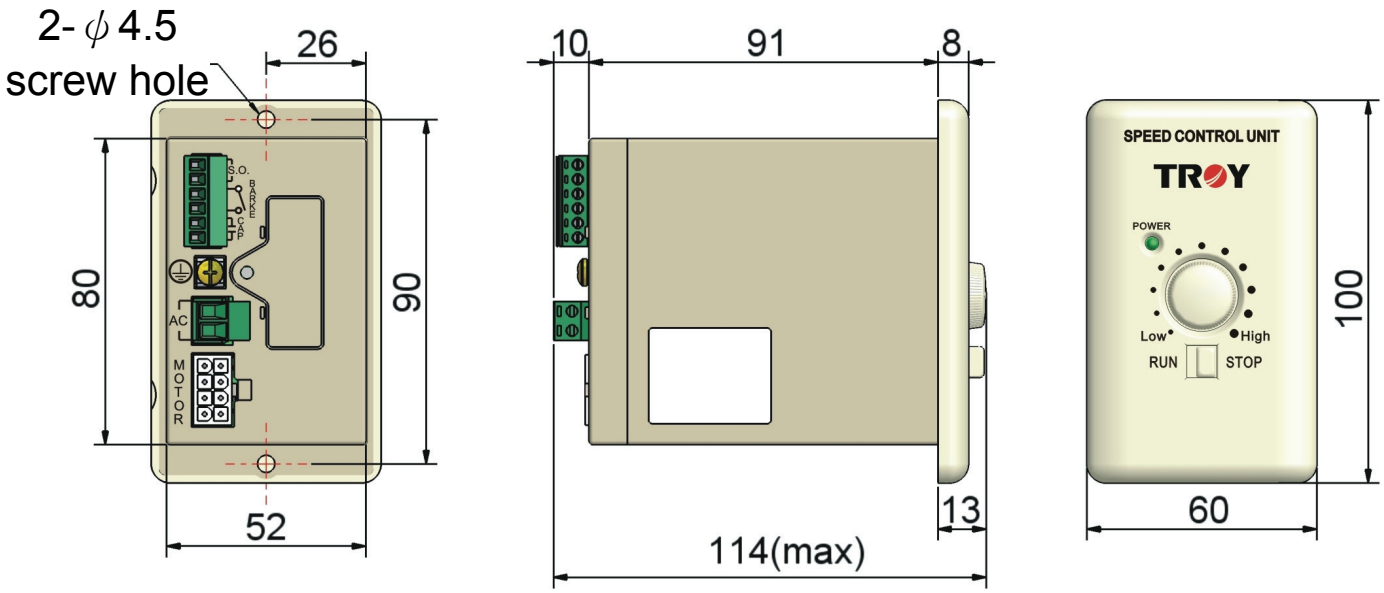
Step 4.Secured the controller by 2 M4 screws



Step 5.Installed the panel back to the controller

Step 6.Finish

6.Dimension



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